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The phenomena of fever have in all ages attracted much attention. Febrile diseases form the great mass of the maladies with which the physician has to contend. The nature of fever however is not clearly known, although it has been a favourite subject of inquiry with almost all writers on the subject. By Hippocrates it was supposed to be a salutary effort of nature to expel some noxious matter. Boorhaave believed it to consist in a lentor or viscidity of the fluids. Hoffman referred it to a diminished energy of the nervous system and Cullen to a spasm of the extreme vessels. More recently fever has been supposed to consist in engorgement and consequent debility of the capillary vessels. But although the proximate cause of fever be obscure, the phenomena themselves are evidently marked. Those most commonly observed are, a feeling of chilliness, succeeded by

preternatural heat of the skin, increased frequency of the pulse, diminution of the secretions, loss of appetite, and weakened muscular power.

These phenomena have been observed to occur in paroxysms more or less distinct from each other, hence the division of fevers into intermittent, remittent, and continued, according as the intervals between the paroxysms, are distinct, imperfect, or scarcely perceptible.

A concise account of the character, causes, and cure, of the first of these divisions, or intermittent fever, will be attempted in the following pages.

The paroxysm of intermittent fever is naturally divided into three stages, a cold, a hot, and a sweating stage. In the great majority of cases, these stages succeed each other regularly, in the order in which they have been named, there are not wanting instances however, in which they have followed each other in a different

order, or where one of them has been altogether wanting. The symptoms marking the cold stage are, languor, yawning, pain in the back and limbs, a soreness and aching referred to the bones, lividness of the lips and nails, small pulse, coldness beginning in the back and extending over the body, contracted skin, rigors and shivering, breathing hurried and anxious, mental energy impaired, and the excretions diminished, to these symptoms begin to succeed, flushes of heat, full and bounding pulse, head ache, with throbbing of the temples, hot and dry skin, thirst, stomach disordered, the intellect confused, and the urine scanty and high coloured. After this condition has continued for some time, sweat begins to appear on the forehead and upper lip, and gradually extends over the whole body, attended with a remission of all the symptoms.

These paroxysms return at regular and stated periods, and the length of time intervening between their occurrence, determines the type of the disease.

There are three leading types of intermittent fevers; the Quotidian, in which the paroxysms occur once in twenty four hours. the Tertian, in which they occur once in forty eight hours, and the Quartan, in which the interval is extended to seventy two hours. Besides these types, there are several others which though of very rare occurrence have attracted the attention of writers. these are the double tertian, the double quartan, the triple quartan, the quintan, sextan, &c These forms are very rare, and are rather objects of curiosity than of any practical importance, as there is nothing peculiar in their nature, and their treatment must be regulated by the same general principles which govern us in the management of the more common forms of the

disease. In our climate the tertian is the most common type, as it is also the most manageable. its paroxysms are generally very plainly marked, and their several stages distinct and evident. They occur near the middle of the day, and in length are a mean between those of the quartan and quotidian forms, being longer than those of the former, and not so long as those of the latter.

Next in frequency to the tertian, is the quotidian. its cold stage is the shortest, though in the whole its paroxysm is longer than that of either of the other forms, and sometimes approaches to the character of remittent fever.

The quartan is of much less frequent occurrence than either of the preceding types, and is most commonly a sequel to the others. It occurs late in the autumnal months, and is the most difficult of cure, probably from its being strengthened by habit.

The diagnosis in intermittent, is in general not difficult. it only becomes so in the ataxic forms, where the disease simulates some other affection, as apoplexy, coma, convulsions, &c. here the regularity of the recurrence of the paroxysms, the previous history of the case, the season of the year, the prevalence of intermittents at the time, and the circumstances of exposure, will enable us to form a correct diagnosis. The only disease which bears a close resemblance to the regular types of intermittent, is hectic fever, they may however be readily distinguished, hectic does not so uniformly consist of the cold, hot, and sweating stages. the circumscribed spot of redness on the cheek, the absence of head ache, and the cheerfulness of the mind in hectic, will also assist us in forming the diagnosis. hectic usually occurs as a consequent to some previous injury or disease, the pulse does not subside entirely with the paroxysm, the tongue is clean, and the appetite not much impaired. these marks will generally be

sufficiently distinctive of the disease.

In this climate the prognosis is generally favourable. among the symptoms of a favourable character are, short paroxysms, with a full and perfect apyrexia, the paroxysms occurring later on each succeeding day, the deposition of a lateritious sediment in the urine. The age of the patient is also to be taken into view, in young persons the disease is more easily arrested than in those of more advanced life.

The unfavourable signs are anticipating paroxysms, imperfect intermissions, assuming the character of remittent fever, visceral de=rangements, symptoms of coma, apoplexy, or convulsions, occurring, great prostration of strength and typhoid depression. When death takes place in intermittents, it mostly occurs in the cold stage, the appearances presented on examination after death are very variable;

Pathognomonic

the spleen is often found indurated and enlarged, the pancreas and liver are occasionally found in the same condition. we are acquainted with no appearances however, which can be considered pathognomic of the disease.

The causes which predispose the body to the attacks of intermittent fever, are all those which tend to induce weakness in general, and particularly of the functions of the alimentary canal, as heat, cold combined with moisture, scanty food, or of an inferior quality, intemperance in eating or drinking. great fatigue, grief, and other depressing passions, loss of sleep &c. The great exciting cause of intermittents is marsh miasma, or malaria. this is probably the real exciting cause of the disease in all cases. the other causes which have been supposed to have this effect acting principally, by inducing that state of the system, which is favourable to the action of the miasmata.

The nature of this miasma is involved in obscurity. Chemical analysis has never been able to detect its presence, or to obtain it in an insulated form. By some it is supposed to be a gaseous substance, if it were so, it could scarcely have so long eluded the researches of chemistry. Others suppose it to be merely an effluvium or odour, and others again think it to be animal=cular. The facts known respecting miasmata, it appears to me can be more readily explained on this last supposition, than on either of the others. Whatever be the nature of miasma how=ever, it is a product of vegetable putrefaction, and may be produced in any situation, where there is heat, moisture, and a quantity of vegetable matter. It is most abundant and most concentrated about marshes, and along sluggish water courses, because there, are to be found in greatest abundance, moisture, and rank vegetables, conditions necessary to its production.

Is miasma always the same in its nature? Is it a unit? most probably it is not. it varies in its character in different seasons, and in different places in the same season. The different species of vegetables from which the miasmata are generated may and probably do produce some effect in modifying their activity. The disease occasioned by the miasma arising from coffee in a state of putrefaction, has been repeatedly remarked for its virulence. May not the cause of the diversity of our autumnal fevers and epidemics, be sought for, in some such modification of the miasmata producing them. a series of careful and accurate observations on this subject is a desideratum.

The treatment of intermittent fever is naturally divided into two parts, that which is proper during the paroxysm, and that to be resorted to during the intermission, the latter only, can be considered as curative, the former is, for the most part, merely palliative.

When the paroxysm has occurred the indications are, to promote its natural and speedy termination, and

to obviate any untoward symptoms that may arise.

The first indication is answered, in the cold stage, by placing the patient in a warm bed, making warm applications to the extremities, as hot bricks to the soles of the feet, and by giving warm drinks. Stimulants are not to be resorted to in common cases, as they aggravate the succeeding hot stage. In the hot stage diaphoretics are indicated. of these the saline articles are to be preferred, as the spiritus Mindereri, and the spiritus nitri dulcis. the following alkalescent mixture is recommended by Professor Chapman.

℞. carbonatis potassæ
Acaciæ gummi āā ℥j
Tinctura apii gt. XXX
Olei Menthæ gt. X
Aquæ puræ ℥iv ad v Misce.

Cold acidulated drinks will be found very agreeable to the patient, as lemonade, or water acidulated with cream of tartar.

Opium has been highly extolled in this stage by Dr. Lind, he states that it relieves the headache, shortens and abates the fit, and induces perspiration. It could not be safely resorted to, however, where there was any tendency to inflammatory action, which is very frequently the case in the intermittents of our climate. Blood letting, in the hot stage, is a remedy of much less doubtful efficacy in the disease as it occurs in our country, and will often be found extremely serviceable. It is demanded wherever there is present much activity of vascular action, or determination of blood to important organs, as the brain, lungs or liver.

To obviate untoward symptoms during the paroxysm, the means used will vary with the varying character of the symptoms. When danger is apprehended in the cold stage, from its violence, or long continuance, and it is feared that reaction will not take place in the system, recourse must be had to stimulating articles, as Carbonate of ammonia,

wine whey, brandy toddy, Camphor, Ether, and particularly opium.

Blood letting has been recommended in this stage by Dr. M'Intosh of Edinburg. Though not to be commended in common cases, great relief will be afforded by the abstraction of blood, when the cold stage is attended by heavy congestions of the brain, lungs, liver or other important parts. A case came under my own notice during the last summer, in which the patient was affected with the most violent spasms of the whole muscular system, during the cold stage, as the vascular system was at the same time excited, recourse was immediately had, to the lancet, and the patient was quickly relieved from every unpleasant symptom, there was no recurrence of a similar paroxysm, and the disease speedily yielded to the ordinary remedies.

High fever in the hot stage must be combated by blood letting. Symptoms of apoplexy supervening, benefit will be derived from bleeding both general

and local, blisters, and evacuants, and particularly the drastic purgatives. Great exhaustion and prostration of strength will demand cordials, and stimulants. In all these cases we must prescribe on general principles, for urgent symptoms as they occur.

The sweating stage rarely requires any particular treatment. if the diaphoresis be too profuse, and debility supervene from that cause, it will be proper to employ tonics, as wine, bark, &c.

It remains to speak of the treatment in the intermission, which is the proper curative treatment, The indication here is to prevent the recurrence of the paroxysm. How our remedies act, in fulfilling this indication, is not clearly known, and perhaps will not be so, until we fully understand the modus operandi of the miasmata producing the disease. The medicines most commonly employed, and with the best effect, belong to the class of tonics, and their usefulness is supposed to depend on their

giving tone to the system, but there are some remedies of acknowledged efficacy, whose usefulness can scarcely be accounted for in this way. their tonic powers, if they exist, are very obscure. They all however, seem to agree, in producing an impression, more or less powerful, on the stomach. Their doing so affords an argument in favour of the opinion that the miasmata act primarily on the stomach, in producing the disease.

Peruvian bark, in its various forms, is undoubtedly the most important article used in the cure of intermittent fever. This article ranks not amongst the least of the many valuable benefits conferred on the old world, by the discovery of the new. It has acquired and maintained a reputation in this disease, which few articles of the materia medica have ever equalled, and none has ever excelled.

The proper time for the administration of bark was for a long time a subject of dispute, it seems

now to be generally admitted, that it should be given during complete apyrexia, and so early in the intermission, as to afford it some time to produce its effects upon the system, before the time of the expected paroxysm.
The previous exhibition of some evacuant is, in nearly all cases, necessary. The functions of the liver are frequently in fault, and a considerable quantity of various ingesta are present, which, in the disordered state of the digestive apparatus, cannot fail to prove a source of irritation. To effect their removal, and to restore a heathy state of the hepatic secretion, should be among our first measures. For this purpose we resort to emetics, or purgatives. the first are the most effectual. They seem to produce an effect independent of the evacuation which they occasion, an emetic, given shortly before an expected paroxysm, will very frequently prevent its occurrence. Emetics may be used with safety in most cases, but they should not be resorted to, when there is present

tenderness of the epigastrium, thirst, or other symptoms of phlogosis. A combination of a scruple of Ipecacuan and a grain of tartar emetic forms an excellent emetic, which also often procures an evacuation from the bowels. Where the emetic fails to produce this effect, it will be proper to follow its operation by a small dose of Calomel, or some mild purgative.

Mercurial purgatives have in a great measure, superceded the use of emetics, as preparative to the administration of bark. Calomel is the article principally employed, and may be given either in combination, or alone followed by some laxative. Ten grains of Calomel, and fifteen of Jalap, forms an useful purgative. Every advantage will be obtained by giving from five to ten grains of Calomel alone, and following it in four or five hours, with a dose of Sulphate of Magnesia, or Castor oil. Where we wish to produce a greater effect on the liver, and to increase the biliary secretion, we may give Calomel in doses of two grains every two

or three hours, until six or eight grains be taken, and then administer a dose of Castor oil, or neutral Salts. Blood letting will often be necessary, owing to the presence of an inflammatory diathesis. When the loss of blood is indicated, it will be advantageously abstracted during the hot stage of the paroxysm. This renders the apyrexia more complete, and obviates any danger that might have been apprehended from the administration of bark.

The system being by these means prepared for its admission, the bark may be given. The most convenient form of exhibition is the sulphate of Quinine, a substance, for which we are indebted to the researches of the French chemists, and which presents to us the virtues of the bark, in a very concentrated form. It may be given in pill, or in a slightly acidulated solution. Given in doses of a grain every hour for six or eight hours, previous to an expected paroxysm, it will seldom fail of preventing its occurrence. Or the

doses may be larger, and given at longer intervals, as two grains every two hours. The following is an useful prescription.

℞ Sulphat. Quinine grs X
Elixir vitriol gt. X
Aquæ pura ℥ij } Misce.

A tablespoonful to be taken every two hours. When the bark in substance is used it will be found beneficial to combine it with an aromatic, as cloves or cinnamon. An ounce of bark with two drachms of cinnamon, to be divided into three doses, one to be taken every three or four hours, the last one two hours before the expected paroxysm, forms an useful prescription. The following are recommended by Professor Chapman,

℞ Pulveris Cinchona ℥j
Serpentaria ℥j
Sub Carb. Soda v. potassa grs XL. } M. f. pulveres IV.

℞ Pulv. Cinchona ℥j
Sal. Ammoniaci ℥j } M. f. pulv. IV.

℞ Cinchonæ ℥j
Caryophylloum ℥j
Super tart. potassæ ℥j } M. f. pulv. iv.

℞ Cinchonæ ℥j
Opiat. Confect. ℥j
Limon. suc. ℥ss
or Elix. vitriol. ℥j } To be put into ℔ viij of Port wine, a wineglassful to be taken three times a day.

The application of Quinine to a denuded surface, has been lately recommended, and promises to be serviceable in cases where this article cannot be retained by the stomach. A small portion of skin, in some convenient part of the body, is deprived of its cuticle by means of a blister, and to this denuded surface the quinine is applied. It proves too irritating alone, and requires to be mixed with some mild powder, or applied in the form of an ointment, made by rubbing it up with some unctuous substance.

Many other articles have been at various times used, for the cure of this disease, and although none of them can be considered at all equal to the bark, some of them are entitled to attention, as being admissible in some cases where the bark would be hazardous, and as substitutes for it, where it cannot be had, or is of an inferior quality.

The preparations of arsenic have the highest reputation, and would no doubt be used more extensively, were it not for the dangerous nature of the article, and the liability to serious accidents in its use. In giving arsenic the same precautions respecting the presence of an inflammatory diathesis are not necessary, at least not to the same extent as in the administration of bark. The preparation most commonly employed is Fowler's Solution, which is an arsenite of potash. it may be exhibited in doses of from five to ten drops, three or four times a day, until some effect is produced. The white

oxyd of arsenic, or arsenious acid, is considered by high authority, to be a superior article. It is given in doses of one tenth of a grain.

The prussiate of iron is favourably spoken of in this disease by several respectable practitioners. Dr J. Jackson, of Northumberland, has given an account of its successful use, in a number of cases. Its dose is not precisely ascertained. Dr Hollichoffer to whom belongs the merit of introducing it into notice, gave it in doses of five grains, three or four times a day. It may however be safely given in doses of a scruple or more.

Black pepper has also been successfully used in the cure of this disease. The berries themselves may be given, or the piperine in doses of eight or ten grains every few hours. The sulphates of copper, and of zinc, have also been recommended.

The Cornus florida and sericia are often used with success. A proximate principle has been lately obtained from the cornus, to which the name of cornine has been given,

with its use however I am not acquainted.

Almost all the vegetable bitters have been employed with advantage. More benefit will be derived from a combination of several of these articles than from their single administration.

If the disease assume a malignant type, a more vigorous treatment will be demanded. Sulphate of Quinine in doses of eight or ten grains every two or three hours, wine whey, black pepper, serpentaria, and other stimulating articles must be resorted to.

In cases where the apyrexia is not perfect, and the bark is therefore inadmissible, we must resort to venesection, topical bleeding over the epigastrium, followed by the application of a blister. By these means the apyrexia will generally be rendered complete, the type of the disease fully developed and the system prepared for other remedies.

In protracted cases, kept up by the force of habit, and where visceral disease is not present, the repetition of emetics, for a succession of mornings, is re=

commended by Professor Chapman, as being highly successful.

The diet should be carefully attended to. The light farinaceous articles are to be preferred. Ripe fruits in small quantity may be permitted. After the disease is checked, eggs or oysters, and the lighter kinds of game and poultry, may be allowed. Care must be taken however that the patient does not overstep the bounds of moderation, as the appetite in these cases is apt to be voracious.

Persons living in miasmatic districts may often escape attacks of this disease, by the observance of certain precautions. The morning fogs and the damp air of evening should be equally avoided. The clothing should be warm, and moisture and wet carefully guarded against. Breakfast should always be taken before going out of the house in the morning. It is very common in the country to take a glass of bitters, as they are called, early in the morning to guard against ague. A cup of good coffee will answer a better purpose, having all the good

without the evil effects of the spirituous potations. The diet may be generous, but should be regular. All excesses should be avoided. Every thing in short which would tend either directly or indirectly to weaken the tone of the system.

I have heard it remarked by an intelligent man engaged in the tanning business, that the men he had employed in the tanyard, and particularly in preparing the bark for the process of tanning, were seldom attacked with intermittent, or remittent fever, even in the most sickly seasons. How far this observation may be confirmed by larger experience, I do not know.